

THE
FUTURE
OF THE BACKS

University Development in Cambridge

by

RICHARD GRAY
A.R.I.B.A., A.M.P.T.I.

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THE FUTURE OF THE BACKS

UNIVERSITY DEVELOPMENT IN CAMBRIDGE

by RICHARD GRAY

TWICE in the last ten years road proposals at Cambridge have aroused the interest of the outside world. On both occasions a good many voices have been raised in protest against the proposal in question, and few, if any, in favour of it. The first occasion was in 1947 when the Ministry of Transport wished to make Queen's Road—the road through the Backs—a trunk road. This proposal lapsed because a development plan was about to be prepared for the town. The second occasion was in 1954 when it became known that the Minister of Housing and Local Government intended to approve the development plan prepared by the planning authority. The plan provided by-pass roads to take trunk traffic off Queen's Road, but it also provided an inner by-pass for local traffic—the Spine Relief Road—to which there were objections.

The instinct behind the letters to *The Times* on these occasions was sound. The future character of central Cambridge will be largely determined by what happens to these two roads, both of which lie in the ring of open space that surrounds the Colleges and the town centre. As roads they are complementary. Queen's Road is the shortest way round the centre on the west, the Spine Relief Road its intended counterpart on the east. Their functions would be different but the traffic problems connected with them interlock. Together they illustrate the dilemma that haunts those who have to plan for rapidly increasing motor traffic in a town which possesses a distinct form designed for a past age. In one case the problem is to restore an academic grove that has been appropriated in all but name as a main traffic artery. In the other a road intended to provide relief for the congested central streets threatens to cut across precious gardens, public and private. The painful fact of planning in Cambridge is that the amenities of the two sides of the town have to be balanced, and a sacrifice to the demands of traffic apportioned between them.

Apart from its fine buildings, the ring of open space round the old part of the town is Cambridge's greatest asset. Its western half—the river landscape of the Backs—has no parallel or equal in the world. And, in any town but Cambridge a good deal of fuss would be made of the chain of commons and College grounds on the other side—the less known Backs. The whole ring ought to be protected. Inroads upon it ought to be resolutely opposed. But at Cambridge there is more to be considered than preservation. What is in danger of being sacrificed to expediency is the physical form of the University itself. In the last thirty years the University has outgrown the familiar shell that had served it for six centuries. We are only at the beginning of the most radical

change since the ring of Colleges was established in the 13th-16th centuries. What form the new development will take cannot be foreseen, but we are now at the point where it is possible to determine whether the University of the future will have an intelligible form or not. Certain facts are clear. The University is spreading westwards across the river and beyond Queen's Road. That is now the only direction in which it can expand. Instead of being grouped round the outskirts of the town as it was in the past, or round the commercial centre as it is now, it will in the future be balanced about the Backs, the old on one side, the new on the other, with its main axis on the line of Queen's Road. Queen's Road will be the internal corridor of the University. It should not at the same time be a main north-south artery for the town. A continuous wall of fast-moving or, worse, of slow-moving, vehicles there will cut the University in two. It follows that everything possible should be done to divert vehicles from Queen's Road, including, if necessary, the construction with the least possible disturbance of a new road on the east side of the centre. Provided that motor traffic can be kept to a minimum it will be possible for the land on both sides of Queen's Road to become a single Campus, and for the new buildings on the west to be laid out in a way that acknowledges the array which will be facing them across the river.

What *are* the Backs? People who know them well, even Cambridge residents, would have difficulty in agreeing on a definition. They were in origin the back sides of the Colleges on the west of the town, whose grounds reached to the river and beyond; in particular of the Colleges between St. John's and Queens', both included. Now the word is used loosely to describe the land on both sides of Queen's Road, the road running north and south more or less parallel to the river on its left (here west) bank. Strictly speaking, the Backs start at the New Court of St. John's in the north and end at the Drinkwater Building of Queens' in the south. These are the two big college buildings on the west of the river in the air photograph (Fig. 4). If however the whole ring of open space is to be divided into its eastern and western halves as is proposed in this article, the Backs must be extended a little in both directions. Behind the New Court of St. John's is a bridge leading to Benson Court of Magdalene College, from which Benson Court is separated by Magdalene Street. The grounds of Magdalene form the northern termination of the open space on the left bank of the river. South of Queens' Green begin two commons, Sheep's Green and Coe Fen, which extend further southwards well beyond the ring, eventually linking up with Grantchester Meadows. Only the portions of Sheep's Green and Coe Fen north of Fen Causeway are included in the Backs, together with the adjacent grounds of Peterhouse. (Fig. 2).

The name of the Backs is familiar to many who have never seen Cambridge. The open spaces on the east side of the old town which deserve to be better known, have no collective name. In this article they will be referred to as the East Backs. The East Backs are not continuous. Four narrow strips of closely built-up land interrupt their continuity. They extend from the river in the

west to Lensfield Road—roughly on a line with Fen Causeway—in the south. They consist of the grounds of the separate Colleges, four major and four minor public open spaces, and the University Cricket Ground at Fenner's. Eastwards Midsummer Common extends some way down the river, linking up with Goldham's Common and the lower reaches of the Cam. In the south-west Downing College is separated only by Addenbrooke's Hospital and the Fitzwilliam Museum from the grounds of Peterhouse. In the extreme north-west corner of Jesus Green is Cambridge's obsolete power station. When this is removed its site will become a riverside walk opposite Magdalene and complete the circle. (Fig. 3).

The preservation into the twentieth century of this green ring which makes an incomparable setting for University and town centre is due to an accidental combination of geology and privilege. The present town centre stands in the loop of the river on a gravel terrace. This is the site of the southern of two original settlements chosen for strategic reasons, the other being on Castle Hill, north of Magdalene. On the river side of the town was once swampy alluvial fen; on the other a spit of low-lying clay runs southwards from the river as far as Downing College. All this land being uninhabitable and unsuited to cultivation became common pasture. The eastern part of it can be clearly seen between the arable strips and the fringe of the town in Fig. 5a. When the Colleges came—some of them started as monastic houses—they established themselves on the outskirts. Pious founders like Henry VI at King's and less pious re-founders like Henry VIII at Trinity, saw to it that they were equipped with goodly domains, to which as time went on they added, purchasing land from neighbours and parts of the Common from the town (Fig. 1). By 1688 we see from Loggan's plan the town was surrounded as it is now on all sides (except one) by Colleges and their grounds. The next 150 years was for the Colleges the golden age of wealth and privilege when they reached a peak of prosperity and a minimum of membership. By a happy chance this golden age coincided with the period in which English landscape architecture was created and reached

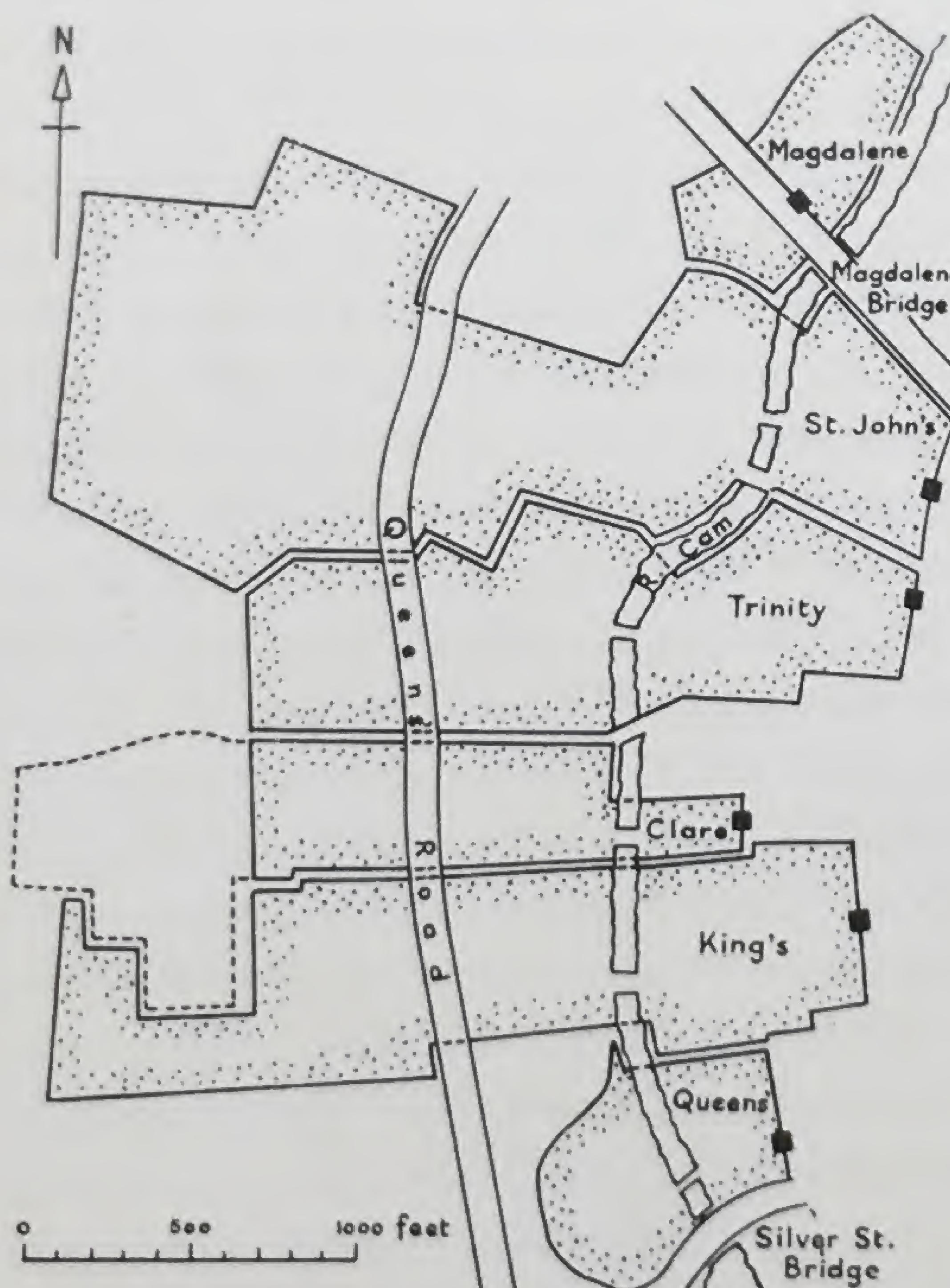


Fig. 1.—Westward expansion of Colleges across the Backs. The small black squares indicate the present position of the main gates of the Colleges.

its culmination. During these years the College grounds were laid out and planted with the best possible advice. In the middle of the nineteenth century the University was reformed; and its doors thrown open. About the same time the railway arrived and the town began to grow. Again the alluvial swamps, now carefully drained, and the dank clay commons stood Cambridge in good stead. If the Colleges were tempted to sell off their domains, and the Borough Council the commons, as building land, they were unable to do so because for the most part the land was not suitable for building. The open space was preserved. Nineteenth-century development took place outside it, and twentieth-century development still further out.

The landscape that we see to-day in central Cambridge is highly artificial; even less natural than it appears to be. Only from the further side of Midsummer Common or from Sheep's Green and Coe Fen is it possible to get views that give one an idea of how Cambridge must have looked before the landscape was landscaped: views indeed recognisably like those in Loggan's "Prospects" (Fig. 5a and 5b). These commons have a rough plainness which is valuable as a contrast to the romantic sophistication of the Backs. The East Backs possess a character of their own, which again, contrasts with that of the Backs proper, to the advantage of both. The difference is partly physical and partly one of style. The total area of open space on each side is roughly the same but on the east the number of units is much fewer. The expanses are therefore actually much larger, and relatively, immense (of Figs. 2 and 3). The East Backs are all on alluvium or clay. They appear to be dead flat. Level horizons and distant boundaries are characteristic. This is true of the grounds of Downing and Jesus, as well as of Jesus Green, Midsummer Common and Parker's Piece. The effect is well illustrated in Ackermann's print of Downing.

In the Backs, however, only the strip between the river and Queen's Road is alluvial and flat. The Colleges stand on the gravel terrace or on made-up ground; to the west is another gravel terrace on which the University Library is sited. By Cambridge standards there is therefore a distinct slope up on both sides. This is clearly visible in the Lawn at King's, where there is a fall of about ten feet from Gibbs' Building to the riverside path, and in the playing field of St. John's on the other side of Queen's Road. Shallow as it is, there is the feeling of a valley, and a narrow valley at that. This is because the central strip is enclosed throughout its length; on the eastern side by buildings, and on the western side by a more or less continuous wall of trees (Fig. 4).

The difference in style is less easy to define. The East Backs are mostly common land, used now for games; whereas in the Backs there is very little unenclosed land till you come to Queen's Green and the Fens above the mills. In the East Backs the College grounds are behind walls. Architecture there is, but hidden. The skyline is marked by the spires of the Catholic Church and of All Saints and by the tower and roofs of Jesus. For the rest there are mostly trim little grey brick terraces, two or three stories high, dating from the early nineteenth century. Park Terrace on the north side of Parker's Piece, New

Square, and Brunswick Walk facing Butt Green are examples. Their low, even skylines accentuate the flatness and the distances. The planting is conventional but right for its setting. The East Backs are urbane yet countrified—the parks of a market town. Their style is local, typically Cambridge.

When one returns to the Backs one enters another world, a world dominated by architecture—by the wedding-cake gothic of St. John's New Court, the Roman severity of Trinity Library, the country seat magnificence of Clare, the classic restraint of Gibbs' and the red brick and half timber of Queens', dominated above all by the turrets and pinnacles of King's Chapel. Moreover the Colleges deliberately display their splendours. Only Trinity Hall retains the wall along the river which they all once had. The landscape is invited into the College, as the Lawn at King's, or continued into an enclosed court through an open colonnade as at Trinity. Or, as St. John's New Court, a building is pushed out into the Backs to terminate the northward vista. The whole panorama is tied together by the ribbon of river (Fig. 4). The scale is very large for England, metropolitan compared with the rest of Cambridge. But not cosmopolitan. Different as they are in style the buildings are all unmistakably English. Though they have come to typify the University and Cambridge in the mind of the public they are not typically Cambridge. Partly because of their scale and partly because the materials with which they are faced—red brick and Ketton, Weldon and Portland stone are not Cambridge materials as grey brick is. The buildings in the Backs are not one with the town in the way that the buildings of Oxford are. They remain always—and it is part of their fascination—a little exotic.

Architecture dominates but does not make the landscape of the Backs. In Nathaniel Buck's engraving dated 1743, and reproduced in part as Fig. 6, we have a very different scene. Yet all the important buildings except St. John's New Court are there. The College meadows edged with a double line of trees and crossed by central avenues are substantially what they were in Loggan's day (Fig. 7). The field in the foreground is still unenclosed: it remained so until 1802. Queen's Road, still a footpath or cart track. But the University has already appropriated them as a place of recreation. During the next hundred years the Backs were transformed by a series of "improvements" and a steady policy of planting, into the romantic landscape we know. Capability Brown in 1779 prepared a plan for the whole of the Backs which involved diverting the river westwards from its natural course in a single great sweep from St. John's to Queens'. But the changes in ground plan actually carried out were remarkably few, as can be seen by a comparison of Loggan's plan (Fig. 7) with the air photograph (Fig. 4). The moving of King's bridge southwards and building St. John's New Court west of the river were the greatest. Nor was the planting out of the ordinary. The weeping willows were then a novelty. Otherwise the trees and shrubs were not exotic. Apart from the trees, the improvers relied on lawns and water for their effects. Eminent architects from Essex to Wilkins gave advice, but the success of the scheme was due not so much to the experts as to the single mind with which the Fellows of half a dozen



Fig. 2—The Backs.

Key to the open spaces in the air photograph opposite. The hatching in Figs. 2 and 3 indicates public, or unenclosed private, open space.

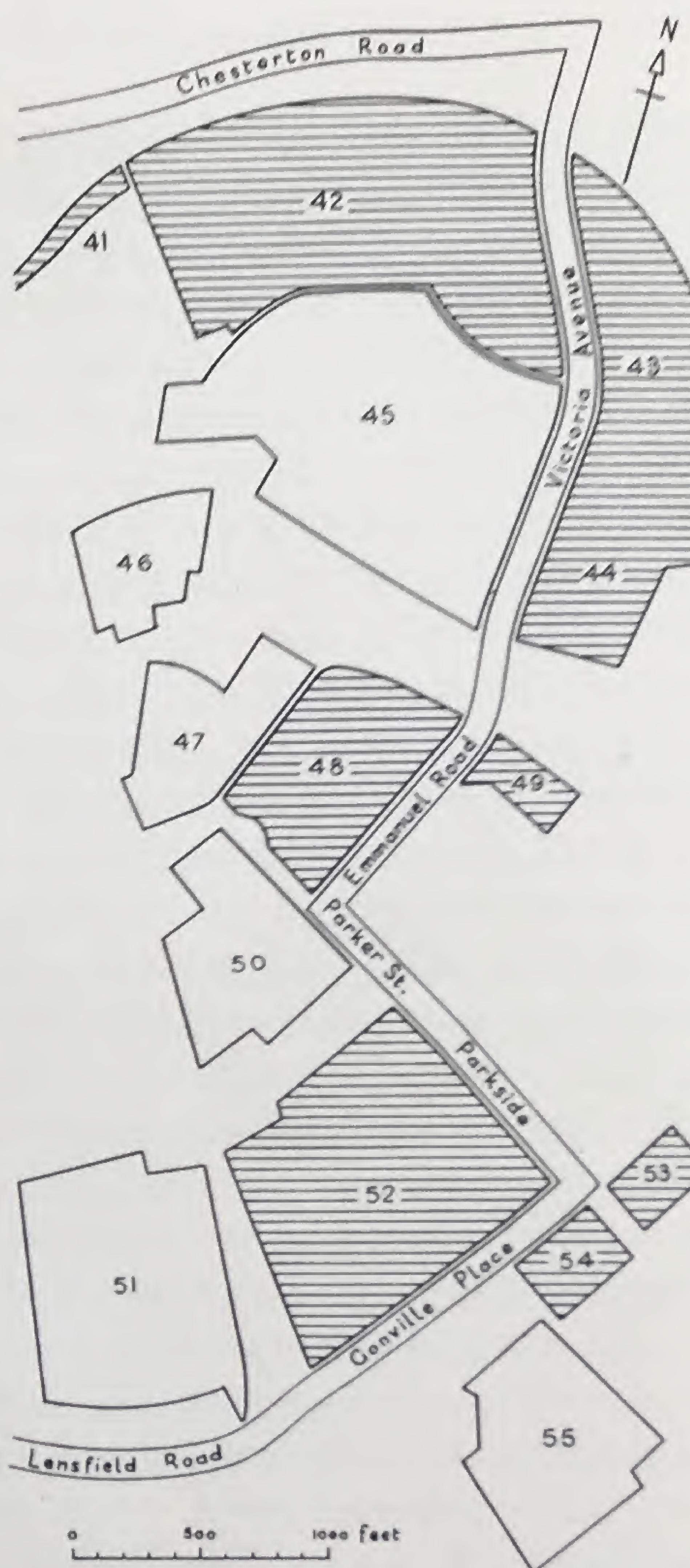


Fig. 3—The East Backs.

THE BACKS

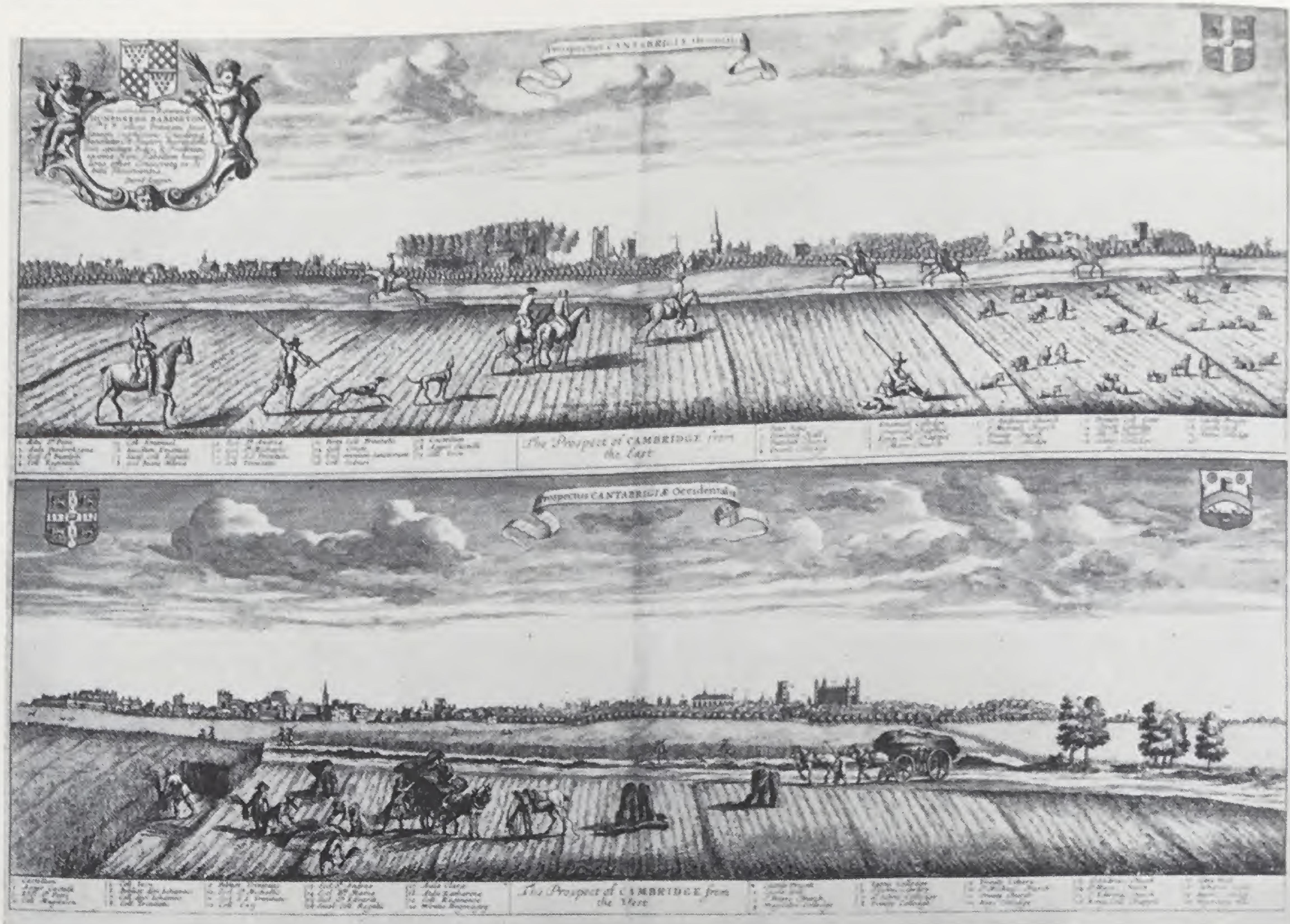
1. Magdalene College.
2. Magdalene, Benson and Mallory Courts.
3. Westminster College.
4. Private houses.
5. St. John's College.
6. St. John's College New Court and Wilderness.
7. St. John's College Playing Field.
8. Trinity College.
9. Trinity College.
10. Trinity Piece.
11. Trinity Fellows' Garden.
12. Trinity Hall.
13. Clare College.
14. Clare Fellows' Garden.
15. Clare Hall Piece.
16. Clare Memorial Court.
17. New University Library.
18. King's College, The Lawn.
19. King's College, Scholars' Piece.
20. King's College, Fellows' Garden and Garden Hostel.
21. King's College Choir School.
22. Queens' College.
23. Queens' Grove.
24. Queens' Green.
25. Private houses.
26. Sidgwick Avenue site.
27. Private houses.
28. Selwyn College.
29. Laundress Green.
30. New Hall.
31. Caius College Fellows' Garden.
32. Ridley Hall.
33. Newnham College.
34. Coe Fen.
- 35, 36, 37. Sheep's Green.
38. Clare College Playing Field.

THE EAST BACKS

41. Quayside walk.
42. Jesus Green.
43. Midsummer Common.
44. Butt Green.
45. Jesus College Grounds.
46. Sidney Sussex College.
47. Christ's College.
48. Christ's Pieces.
49. New Square.
50. Emmanuel College.
51. Downing College.
52. Parker's Piece.
53. Petersfield.
54. Donkey's Common.
55. Fenner's.



Fig. 4—Central Cambridge from the air. Running N.W. to S.E. is the Spine which crosses the river at Magdalene Bridge. The inner triangle contains the Town Centre. This is surrounded by a ring of Colleges and an outer ring of College grounds and Commons.
(R.A.F. Photo. Crown Copyright Reserved.)



Figs. 5a and 5b—David Loggan's Prospects of Cambridge, 1688. The Prospect from the East at top, the Prospect from the West below.



Fig. 6—Part of Nathaniel Buck's view of Cambridge, published in 1743. Slight vertical exaggeration. The Wren Library at Trinity, Great St. Mary's, King's Chapel, Clare, and Gibbs' Fellows' Building at King's. The Backs much as in Loggan's day.



Fig. 7.—David Loggan's Plan of the University and Town, 1688. The Spine, the ring of Colleges, incomplete only at the inner triangle, the top the Backs.



Fig. 8—Central Cambridge from the tower of the New University Library. Clare Memorial Building in the foreground, the Backs, the western range of Colleges, and the Centre. Beyond, in shadow, the East Backs. (Photo, A. F. Kersting.)



Fig. 9—Crocus time at King's. Pedestrian traffic wears away the hogging paths. This part is shortly to be paved with stone and cobbles.



Fig. 10—Queen's Road looking north. Normal traffic. Noon, October, 1955. On the left the gateway to the Clare Memorial Court.

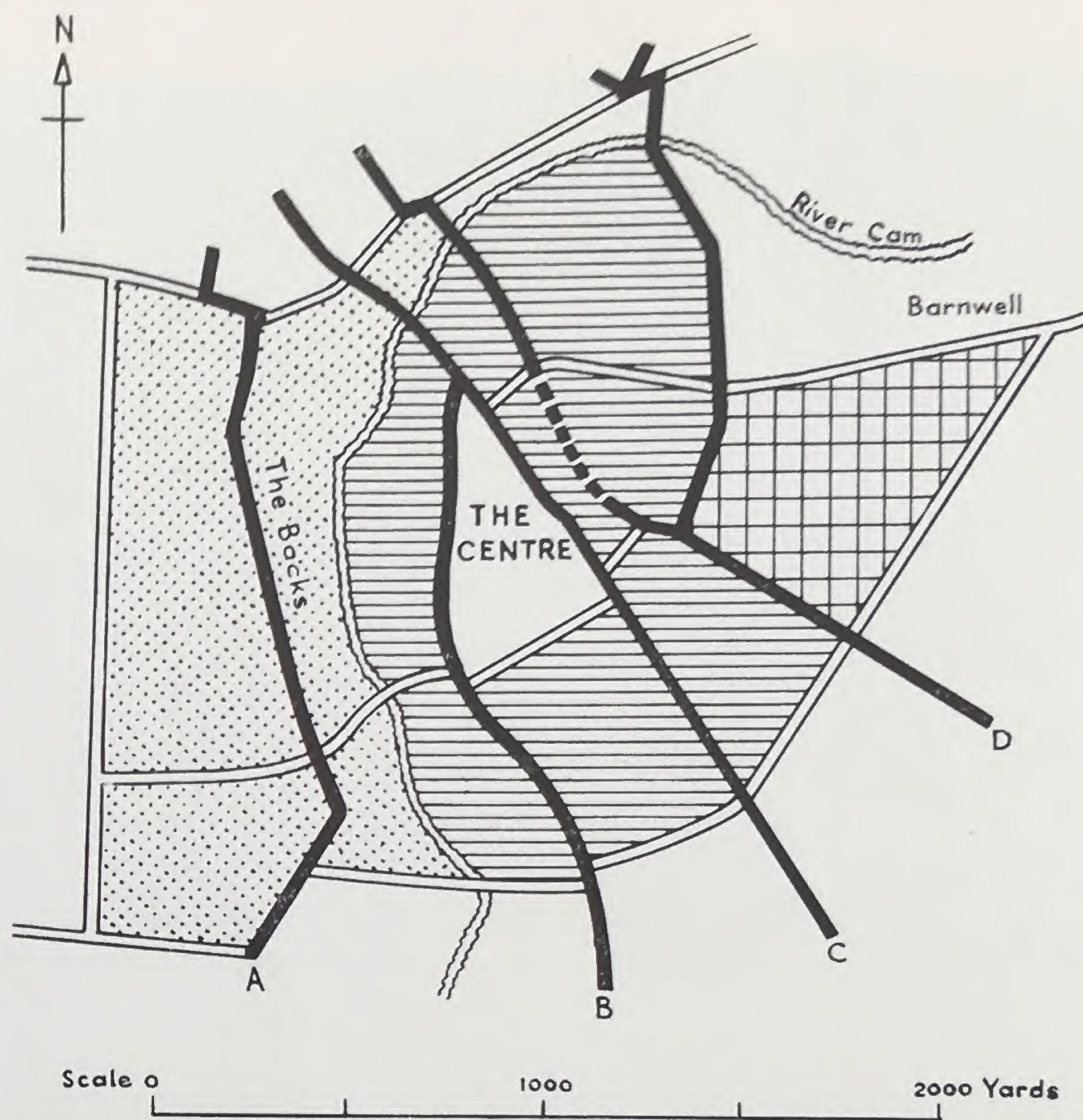


Fig. 11—Central north-south routes compared.

- A. Queen's Road.
- B. Trumpington Street, King's Parade, Trinity Street, St. John's Street.
- C. The Spine—Regent Street, St. Andrew's Street, Sidney Street, Bridge Street, Magdalene Street.
- D. Victoria Avenue Route—Parkside, Parker Street, Emmanuel Road, Short Street and Victoria venue. Connecting with Drummer Street, the continuation of Parker Street, is the Spine Relief Road, only the northern part of which has so far been approved.

Colleges pursued the ideal of the romantic landscape. In 1830 the scheme was complete. There has been virtually no change since that date. Time has given the improvers' handiwork a perfection that must surpass their dreams.

We have said that the landscape of the Backs is romantic. By this we mean that its intention (and its effect) is to create an illusion. It does not depend as a classical landscape does—a garden by Le Nôtre for instance—on layout, proportions and form, but on the appearance of being natural, of having 'happened.' This is not the kind of landscape that could have 'happened' in Cambridgeshire. In the early part of the nineteenth century when there was open country beyond Queen's Road it was possible to pretend that something of the same kind did extend as far as Coton. When one walked out through the Backs and across the fields the transition was gradual and caused no shock. But now, when west Cambridge is dotted with suburban houses and the tower of the New Library rises higher than the pinnacles of King's, the maintenance of the illusion is dependent on the screen of trees along the Queen's Road. Cut down all those trees and expose the Backs to west Cambridge—they would

still be beautiful but the magic would be gone. Because they are no longer the transition between town and country, but an island of landscape in a sea of urban development, however discreet, the character of the Backs is changed and their significance enhanced. They are a world within a world, detached from material reality, almost sacred.

In this light one can appreciate the kind of damage that motor traffic does in the Backs. Cars and lorries destroy the romantic illusion (Fig. 10). They reduce the landscape to the level of an exceptionally fine town park. For many people the Backs are no more than that. The difference of view explains complaints of sacrilege on one side and of sentimental obstruction on the other. If deliberate violation of the Backs were proposed public opinion would recognise it as a crime. Gradual encroachment is more difficult to resist. First lorries—then traffic lights—then lamp standards. The form of the landscape is preserved but the spirit is driven out. That is likely to be the slow end of the Backs.

Let us see what the traffic in Queen's Road is and whether it needs to be there. First of all there are cyclists, who exist in large numbers in Cambridge. No-one would object to them. They are quiet. They do not offend the *genius loci*. In their own way they embody it. Then, heavy transport. There can be no excuse for running goods vehicles through the Backs. By-passes for trunk routes have been planned; their construction is long overdue. Tourists are of two kinds, Cambridge residents and visitors. Both want to drive along Queen's Road for the pleasure of it. They have a right to do so. Finally local traffic, again in two categories, vehicles travelling north or south, wanting to avoid the congested town centre, and vehicles having business in the centre, entering or leaving by Silver Street. Of these elements the trunk road traffic is the most prominent but not numerically the greatest. The tourist traffic, which can hardly be diverted, is to some extent seasonal, being heaviest in the Summer Term and Long Vacation. Local traffic is likely to increase as more vehicles come on to the market, and more drivers will choose Queen's Road as congestion in the centre increases. By diverting, via the Spine Relief Road, some local through vehicles as well as some which now enter or leave the centre by Silver Street, it is hoped to prevent an increase of traffic in Queen's Road.

Fig. 11 shows in black existing and proposed north-south routes through and past the centre. They run between the Madingley Road-Chesterton Road line in the north, and the Fen Causeway-Lensfield Road-Gonville Place line in the south. From west to east they are:

- (A) Queen's Road.
- (B) Trumpington Street, King's Parade, Trinity Street, St. John's Street, joining at Bridge Street.
- (C) The Spine—Regent Street, St. Andrew's Street, Sidney Street, Bridge Street, Magdalene Street.
- (D) Parkside, Parker Street, Emmanuel Road, Victoria Avenue (referred to here as the Victoria Avenue Route).

Branching off D is shown the Spine Relief Road, only the northern portion of which has been officially approved. Both B and C run through the narrow, congested streets of the centre, meeting to cross the river by Magdalene Bridge.

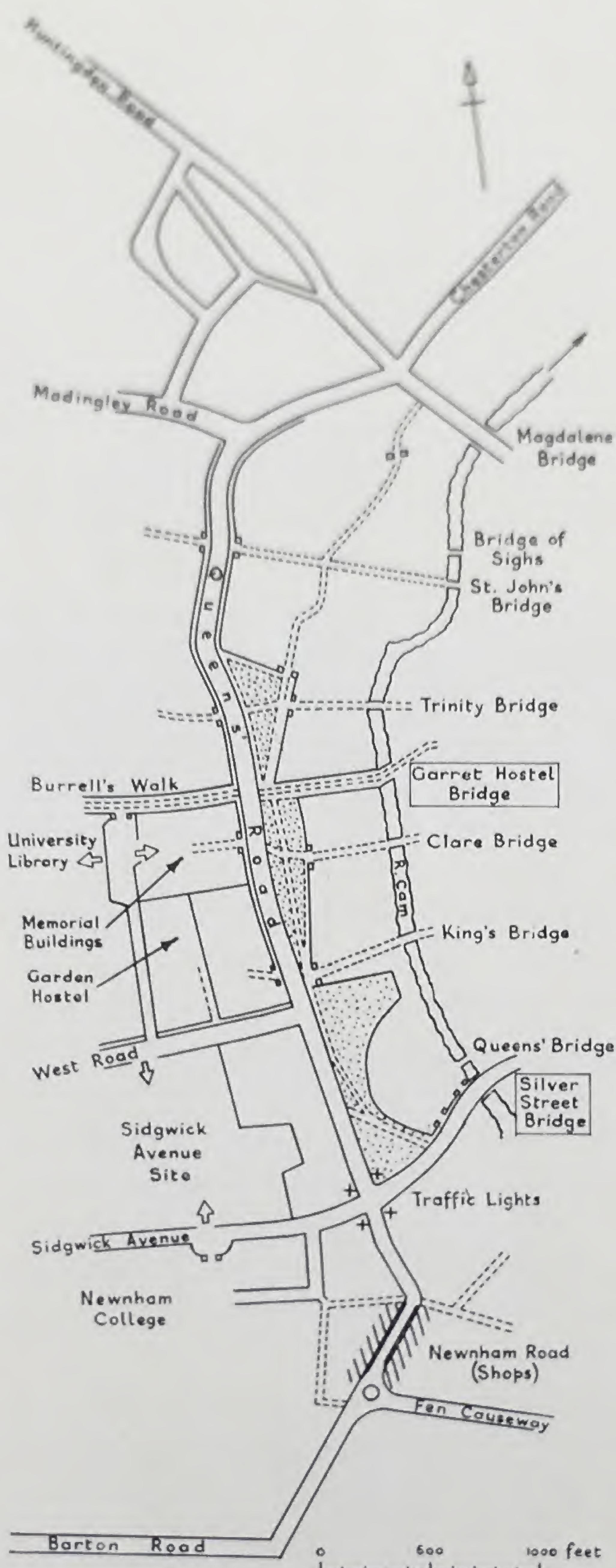


Fig. 12.—Queen's Road

Drivers wishing to avoid the centre have at present a choice between Queen's Road and Victoria Avenue. Queen's Road is the preferred route for vehicles travelling along the line of the spine. The Queen's Road route is also well suited to be a bypass (Fig. 12). Starting from the south, vehicles leave Trumpington Road by Fen Causeway. This is a modern road specially built about 1925 to take traffic off the Silver Street bridge. At Newnham there is a roundabout leading into the narrow dog's-leg of Newnham Road with shops on both sides. This is the route's one bad spot. From the traffic lights at the Silver Street-Sidgwick Avenue crossing there is an unobstructed run northwards to Madingley Road—a distance of three-quarters of a mile. In that length there is only one side turning—the quiet West Road. The only building, other than a few private houses, approached directly from Queen's Road is the Clare Memorial Building and this is also accessible from West Road. The carriage-way is not less than 30 feet wide throughout.

There are three schools of thought in Cambridge about overflow traffic from the town centre. The first thinks that if a relief road is needed Queen's Road is well suited to the purpose. Too much fuss is made about the Backs. Provided trunk traffic is diverted, Queen's Road which does not now carry anything like its fill, would take the overflow comfortably. This school opposes the Spine Relief Road as unnecessary and damaging to Christ's Pieces which is the only public open space close to the centre. The

second school opposes the Spine Relief Road because they believe that it would have the opposite effect of that intended. Instead of relieving the centre it would attract traffic into it. They would divert traffic from the centre by encouraging commercial interests to move to the shopping streets of Barnwell (east of Christ's Pieces). They would like Victoria Avenue to be the main north-south route with the bulk of the shops on the east of it. This would leave the whole of the old town as a University precinct surrounding a reduced centre. The third school is represented by the policy of the planning authority, as set out in the Development Plan which in turn is based on the Holford Report. They think the existing centre where University and Town meet is the right place for the shops, whose prosperity depends to a great extent on the powerful attraction of the surrounding University. They believe that a circulating road close to the Spine with access to it at a number of points is the best way of relieving the central streets. As three-fourths of the population live on the east of the Spine, the relief road should be on that side. The same road would provide a shorter way past the centre for local through traffic as an alternative to Queen's Road.

A word is needed on the effect of the proposed Spine Relief Road on the landscape of the East Backs. If there is to be a great increase of traffic outside the centre as well as inside it, then it will probably be easier to fit it into the landscape of the East Backs, than into the landscape of the Backs proper. The wide horizons and distant boundaries of the eastern commons give them something of the character of an airfield. And, of landscape forms, an airfield is one of the best suited to motor vehicles. Its great expanse dwarfs them. Even if engines become absolutely silent, motor vehicles will always look wrong in the enclosed, intimate landscape of the Backs. The most vulnerable parts of the East Backs are the grounds of Jesus College on its west side, and Christ's Pieces. They, like the Backs, are enclosed and intimately planted. Here the effect will be serious. But not quite so serious as might be supposed. The buildings of Jesus will be further from the new road than Gibbs' Building is from King's Parade; and in Christ's Pieces traffic is no novelty. There is the bus station on one side now and Emmanuel Road on the other.

The section of the Spine Relief Road between Jesus Lane and Parker Street was omitted from the Development Plan. The most powerful argument against it is that it would separate Christ's Pieces, the only central public open space, from the shopping streets. The ideal line for this section—shown on Fig. 11 by dots, would cut across the gardens of Christ's and Sidney Sussex Colleges. The line proposed in the Holford Report would skirt the north-west corner of Christ's Pieces and join Jesus Lane further east. If this section, imperfect as it may seem in the eyes of the traffic engineer, is ever carried out it will not be all loss, for the town will gain a fine as well as a useful road. Parker Street could be widened and a scheme of planting designed for the whole route. The East Backs would then become an entity.

The University broke out of the ring round the old town in 1882 when Selwyn College was built on the far side of the Backs. After Selwyn there was a long gap before the Clare Memorial Building (first part) 1924, and the New Library 1931-4, settled the westward trend. The removal of one of the most important University departments as opposed to a College, was the decisive step. The choice of a site midway in the length of the Backs fixed the focal point of future development, which by accident or design was given architectural expression in the twelve-storey book-stack. The Library tower is not likely to be exceeded in height or weight by any future building.

Fig. 13 explains the two main stages of University development so far. The roads which form the inner triangle are indicated by solid lines. A comparison of Loggan's plan (Fig. 7) shows that the ring of Colleges has not substantially changed in 300 years. There is one new college—Downing, of about 1800—which fills in the gap at the south end of the circle on a site called in Loggan's plan "The Marsh." The other colleges have buildings added. The main change in this period is the increase in University buildings. Till the nineteenth century the whole of the University departments were housed in the group of buildings near the Senate House called the Old Schools—1 on Fig. 13. The nineteenth century added the New Museums site, 2, now densely built up. This contains the Arts School and Examination Halls in one corner, and, taking up most of the site, science departments including the Cavendish Laboratory. In 1906 the University bought the northern part of the Downing site, 3. The buildings on this site are the departments of Law, Archaeology and Ethnology, Botany, Agriculture, Geology, Mineralogy, Physiology, Psychology, Anatomy, Bio-chemistry, Pathology and Parasitology, and the Low Temperature Research Station. Other buildings near the inner triangle are the Fitzwilliam Museum, the University Press, the Mill Lane Lecture Rooms and the Union. It is remarkable that of all the foregoing University buildings, the Union alone is located east of the Spine. All the rest are clustered at the southern end of the triangle, and towards its western edge—along the Downing Street-Pembroke Street line.

The second stage of University development has also been southwards and westwards. This stage also appears to be taking the form of a triangle, a larger triangle enclosing on two sides the inner triangle and like it based on the Spine (Fig. 13). The outer triangle, shown by a pecked line, was brought into being by the construction in 1925 of the Fen Causeway. Already before that date the Engineering Laboratories had moved from Downing Street to Coe Fen Lane—the approach to Fen Causeway from Trumpington Road. This move was followed by the building of the Clare Memorial Court and the New Library in Queen's Road, 4. During the 'thirties other buildings for the Engineering Department went up in Coe Fen Lane, culminating in the late forties in a long five-storey building, 5. An even larger building is now under construction for the Department of Chemistry in Lensfield Road, 6. This will be within easy reach of the other science departments via Tennis Court Road. These two blocks mark the

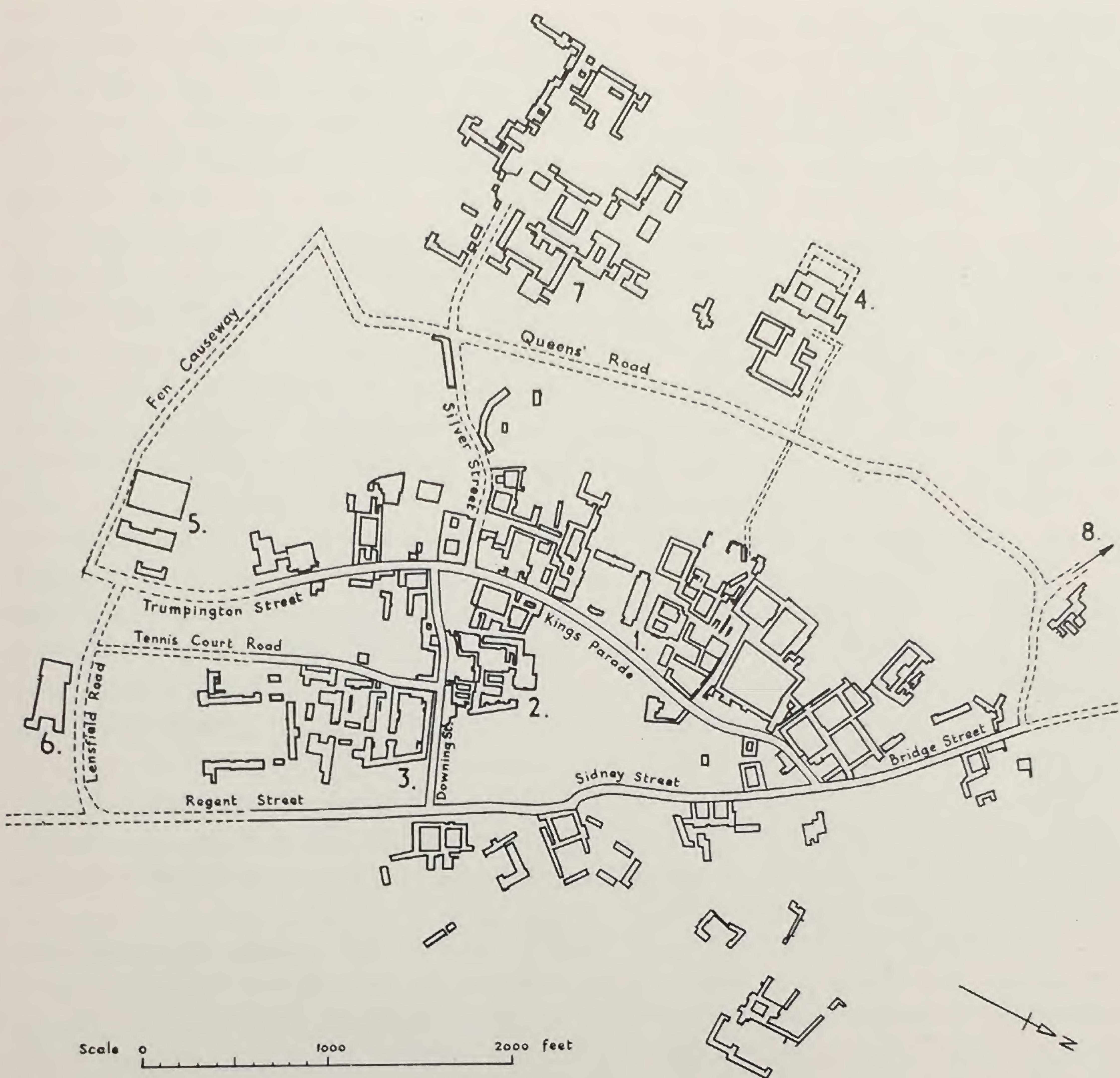


Fig. 13—University Expansion.

1. Old Schools.	5. Engineering Laboratories.
2. New Museums Site.	6. Chemistry Building.
3. Downing Site.	7. Sidgwick Avenue Site.
4. New Library.	8. Madingley Road.

limit of University expansion southwards. Though outside the ring of Colleges, they belong geographically and departmentally to the old town group of University buildings.

After the second world war the University decided upon a gradual removal of the Arts departments to the west side of the river. The Arts departments, which muster about half the total number of undergraduates, are at present badly off for space in comparison with scientific departments. A thirteen-acre site was acquired with frontages to Sidgwick Avenue and West Road. In 1952 Sir Hugh Casson and Mr. Neville Conder prepared a report on its development.

The layout of buildings they proposed is shown at 7 on Fig. 13. This group of buildings is closely related to its neighbours in Sidgwick Avenue, Selwyn and Newnham Colleges and Ridley Hall. (See also Fig. 14). Between this group and the Clare buildings King's have put up the Garden Hostel. Clare have recently added another court on the south side to the Memorial Buildings. The University Library also is planning an extension at the rear of the existing building. Altogether a substantial complex of University buildings will soon be forming on the west of Queen's Road. Fig. 13 shows that the second cell of the University is beginning to take shape. The westward trend is emphasised by development further out on both sides of Madingley Road, 8. This includes the Observatory and University Farm, the new School of Veterinary Science and a possible Nuclear Physics department. At the north end of Queen's Road is Westminster College, a theological college allied to the University, near which is a cluster of other religious houses. The third women's college, New Hall, is now established in a house at the corner of Silver Street and Newnham Road.

Another reference to Fig. 13 reveals that there is, or will be, a correspondence between the disposition of University buildings on the two sides of the Backs. This may be accidental. If so it is also logical. Midway in the length of the backs the University Library, 4, corresponds with the Senate House and Old Schools, 1. At their southern end the Sidgwick Avenue Arts buildings, 7, correspond with the science buildings on both sides of Downing Street, 2 and 3. The first pair are connected by a footpath and cycle track which crosses Garret Hostel Bridge; the second by a motor road, though not a wide one, which crosses Silver Street Bridge. These are the only public bridges between Newnham and the Madingley Road (Fig. 12).

The subject of bridges brings us back to traffic. If we make the reasonable assumption that in the foreseeable future half the total number of undergraduates and research students will be working in departments west of Queen's Road, it means that 3,500 students and at least 500 others, including teaching staff, assistants, and servants, will be circulating in and around the Backs during term time. Nine out of ten Colleges and probably nine out of ten licensed lodgings are on the east of Queen's Road. There is evidently going to be a good deal of cross traffic without taking into account the movements of members of the University living in west Cambridge and working in science departments, and those of ordinary citizens going to work or shop in the Centre. Cars will be concentrated at the Silver Street—Sidgwick Avenue crossing; cycles at the same place and also at the point where the path from Garret Hostel Bridge crosses Queen's Road to meet Burrell's Walk. Pedestrians in addition to these two routes will have the choice of half-a-dozen College Bridges. Cross traffic will be heaviest on weekday mornings, lighter in the early afternoon, heavier again in the late afternoon except on Saturdays, and negligible on Sundays. Peaks will occur at the hours when lectures begin and end. The whole of the route from Downing Street to Sidgwick Avenue which is for the most part narrow will be heavily loaded. Silver Street Bridge will have the heaviest load of all, for traffic